

CLAIMS

1. A hardware simulation system for simulating hardware on which software is to be tested comprising:

    a hardware interface for intercepting and redirecting communications between the software and the hardware and returning responses to the software;

    a network simulation system in communication with said hardware interface for providing simulated hardware and generating responses to the software; and

    a user interface for entering user commands for creating a simulated network, defining topology of said simulated network, and for invoking said simulated network, said user interface being in communication with said network simulation system; wherein

    said network simulation system includes

        a network simulator for simulating functionality of said simulated network, said network simulator being in communication with said hardware interface; and

        a simulator library for providing an application programmers interface for creating said simulated network and for defining functionality of said simulated network; said simulator library being in communication with said network simulator and said user interface.

2. The hardware simulation system according to claim 1 wherein the network simulator comprises:

    an emulator stub for translating communications between said network simulator and said hardware interface, said emulator stub being in communication with said hardware interface;

a topology manager for maintaining a topology of the simulated network, said topology manager being in communication with said emulator stub;

an event handler for directing communications received by said emulator stub and returning communications to said emulator stub; said event handler being in communication with said emulator stub and said topology manager;

at least one hardware simulator for simulating hardware, said at least one hardware simulator being in communication with said event handler; and

a user event handler for handling said user commands and returning responses from said network event handler to said user interface, said user event handler being in communication with said user interface, said event handler, said at least one hardware simulator, and said topology manager.

3. The hardware simulation system according to claim 1 wherein the network simulation system further comprises an end station simulator for simulating an end station, said end station simulator being in communication with said network simulator.

4. The hardware simulation system according to claim 1 wherein said hardware interface further comprises:

a simulator stub for translating communications between said hardware interface and said hardware and said software; said simulator stub being in communication with said hardware and software;

a hardware interface event handler for redirecting communications between the hardware, software and network simulator; and

8. A method for simulating hardware according to claim 6 further comprising simulating an end station.

9. A hardware simulation system for simulating hardware on which software is to be tested comprising:

hardware interface means for intercepting and redirecting communications between the software and the hardware and returning responses to the hardware and software; network simulation means in communication with said hardware interface means for providing simulated hardware and generating responses to the software and hardware; and user interface means for entering user commands for creating a simulated network, defining functionality of said simulated network, and for invoking said simulated network, said user interface means being in communication with said network simulation means; wherein

said network simulation means includes network simulator means for simulating functionality of said simulated network, said network simulator means being in communication with said hardware interface means; and simulator library means for providing an application programmers interface for creating said simulated network and for defining functionality of said simulated network; said simulator library means being in communication with said network simulator means and said user interface means.

10. The hardware simulation system according to claim 9 wherein the network simulator comprises:

emulator stub means for translating communications between said network simulator means and said hardware interface means, said emulator stub means being in communication with said hardware interface means;

topology manager means for maintaining a topology of the simulated network, said topology manager means being in communication with said emulator stub means;

event handler means for directing communications received by said emulator stub means and returning communications to said emulator stub means; said event handler means being in communication with said emulator stub means and said topology manager means;

at least one hardware simulator means for simulating hardware, said at least one hardware simulator means being in communication with said event handler means; and

user event handler means for handling said user commands and returning responses from said network event handler means to said user interface means, said user event handler means being in communication with said user interface means, said event handler means, said at least one hardware simulator means, and said topology manager means.

11. The hardware simulation system according to claim 9 wherein the network simulation means further comprises an end station simulator means for simulating an end station, said end station simulator means being in communication with said network simulator means.

12. The hardware simulation system according to claim 9 wherein said hardware interface means further comprises:

simulator stub means for translating communications between said hardware interface means and said hardware and said software; said simulator stub means being in communication with said hardware and software;

hardware interface event handler means for redirecting communications between the hardware, software and network simulator means; and

an IP stub means for translating communications from said hardware interface means and said simulator system means.

13. The hardware simulation system according to claim 9 wherein the hardware includes peripheral portions and said hardware interface means further comprises a communications controller means for communicating with said peripheral portions.